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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Masatoshi Haraguchi

0828.64472

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24978

7590

04/07/2006

GREER, BURNS & CRAIN

300 S WACKER DR

25TH FLOOR

CHICAGO, IL 60606

EXAMINER

WOOD, WILLIAM H

ART UNIT

PAPER NUMBER

2193

DATE MAILED: 04/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	09/616,799		HARAGUCHI ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	William H. Wood		2193	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,4-7,10-13,15-17 and 19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-7,10-13,15-17 and 19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

Claims 1, 4-7, 10-13, 15-17 and 19 are pending and have been examined.

#### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 4-7, 10-13, 15-17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hayashi** et al. (USPN 5,396,631) in view of **Gillies** et al. (USPN 5,768,595).

#### *Claim 1*

**Hayashi** disclosed a method of facilitating optimization processing in a compiler (*column 1, lines 6-10*), comprising the steps of:

(a) storing, in a language-specific-rule table, one or more assignment rules (*figures 5-6(b); column 8, lines 36-68; and column 9, lines 40-52*) which are specified for one or more programming languages allowing vector representation (*column 1, lines 17-19*);

(b) analyzing a program code which includes one or more instructions, and is described in one of said one or more programming

languages, based on said one or more assignment rules, to obtain an analysis result (*figure 2; column 3, line 5 to column 4, line 18*); and

(c) embedding said analysis result in said program code (*column 3, lines 15-24; column 1, lines 25-34*);

wherein in said step (a), said one or more assignment rules are stored in said language-specific-rule table as one or more language-specific-information analyzing functions (*figures 5-6(b); column 8, lines 36-68*), and

said step (b) comprises the substeps of,

(d) reading out, from said language-specific-rule table, at least one or said one or more language-specific-information analyzing functions which is needed for analyzing said program code (*figures 5-6(b); column 8, lines 36-68; and column 6, line 66 to column 7, line 6; figure 3*), and

(e) determining values of or relationships between variables included in said program code, based on said at least one of said one or more language-specific-information analyzing functions read out in said step (d), and producing said analysis result which includes the determined values of or relationships between the variables (*figure 5; listed optimizations*);

wherein said step (b) further comprises the substep of,

(f) said at least one of said one or more language-specific-information analyzing functions read out in said step (d) is registered in a check function table for use in said step (e) (*figures 5-6(b); column 8, lines 36-68; check functions being the optimization functions listed*).

**Hayashi** did not explicitly state at least two programming languages. **Gillies** demonstrated that it was known at the time of invention to adapt compilers to multiple languages (column 7, lines 55-62). It would have been obvious to one of ordinary skill in the art at the time of invention to implement the compiler system of **Hayashi** with multiple front ends and thus providing multiple languages in as found in **Gillies**' teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to provide a compiler for multiple languages and thus increase its usefulness (**Gillies**: column 7, lines 58-62).

Claim 4

**Hayashi** disclosed a method according to claim 1, wherein the operation in step (b) is performed for each instruction set which is comprised of at least one of said one or more instructions (*figures 2 and 9*), and

in said step (c), said analysis result is embedded in a position preceding said each instruction set in said program code (*figure 5, at least element 22*).

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Claim 5

**Hayashi** disclosed a method according to claim 1, wherein said program code is a source code (*column 1, line 19; source to the assembler*).

Claim 6

**Hayashi** disclosed a method according to claim 1, wherein said program code is an intermediate code (*figures 11-15*).

Claims 7 and 13

The limitations of claims 7 and 13 correspond to the limitations of method claim 1 and as such are rejected in the same manner.

Claims 10-12 and 15-16

The limitations of claims 10-12 and 15-16 correspond to the limitations of method claims 4-6 and as such are rejected in the same manner.

Claims 17 and 19

The limitations of claims 17 and 19 correspond to the limitations of method claims 1 and 6 and as such are rejected in the same manner. Additionally,

**Hayashi** disclosed “*syntax analysis ... to produce an intermediate code*” (column 3, lines 15-18).

### ***Response to Arguments***

3. Applicant's arguments filed 03 January 2006 have been fully considered but they are not persuasive. Applicant argues: <sup>1)</sup> **Gillies** fails to disclose a table having assignment rules for multiple languages; <sup>2)</sup> **Hayashi** does not teach programming languages that allow vector representation; and <sup>3)</sup> **Hayashi** does not disclose intermediate code. These arguments are not persuasive.

First, **Hayashi** is cited as showing a table having assignment rules. **Hayashi** is then modified, along with its table, to become applicable for multiple languages (demonstrated by **Gillies**).

Second, Applicant's own disclosure cites the languages of **Hayashi**, Fortran and C, as capable of vector representation (Specification, page 1, line 24 to page 2, line 11).

Third, as shown in the rejection of claim 6, **Hayashi** does disclose intermediate code (at least figures 11-15).

Having addressed all of Applicant's concerns, the rejections are maintained as the above indicates.

### ***Conclusion***

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**.

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See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

### ***Correspondence Information***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Wood whose telephone number is (571)-272-3736. The examiner can normally be reached 9:00am - 5:30pm Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (571)-272-3719. The fax phone numbers for the organization where this application or proceeding is assigned are (571)273-8300 for regular communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.



William H. Wood  
Patent Examiner  
AU 2193  
March 23, 2006



**KAKALI CHAKI**  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100